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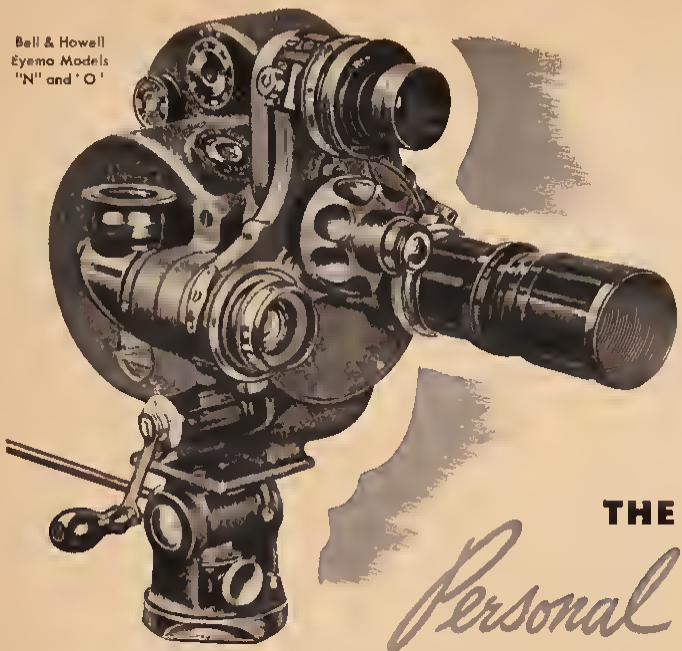

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 28 JANUARY, 1947 NO. 1

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ON THE FRONT COVER—The stars of Paramount's "Blaze of Noon" receive final instructions from director John Farrow (seated on camera boom wearing top coat) for a closeup scene Director of Photography William Mellor, A S C, is seated beside the camera checking action Sonny Tufts, William Holden, Sterling Hayden, William Bendix, Anne Baxter, Howard Da Silva and Johnny Sands are grouped around the plane

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McGill's, 179 Elizabeth Street, Melbourne
Australian and New Zealand Agents

Published monthly by A S C. Agency, Inc
Editorial and business offices
1782 North Orange Drive
Hollywood (Los Angeles 28), California
Telephone GRanite 2135

Established 1920. Advertising rates on application Subscriptions United States and Pan-American Union $2.50 per year Canada, $2.75 per year, Foreign $3.50 Single copies 25c, back numbers 30c foreign single copies 35c back numbers 40c

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FASTAX HIGH SPEED CAMERA

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The high-speed Fastax motion picture camera, which played a unique role in making the photographic record of the atom bomb tests, is rapidly becoming an important tool in American industry.

During the war, Fastax cameras were used extensively in the development of war equipment. Short duration phenomena such as the explosive effect of ammunition, jet propulsion, and the jamming action of machine guns were seen by engineers for the first time by means of the Fastax. War manufacturers, observing frailties in materials and parts moving at lightning speed under the shock of simulated battle conditions, quickly recognized the possibilities of applying high speed motion picture photography to peace time production problems. As a result, hundreds of Fastax cameras are today at work in dozens of major industries making "super slow motion" studies of the high speed action of fuse blow-outs, relays and switches, governors, gears, clutches, pistons, propellers, watch and clock movements, flow of metals, and the fatigue of materials. Yet the surface of potential applications has only been scratched.

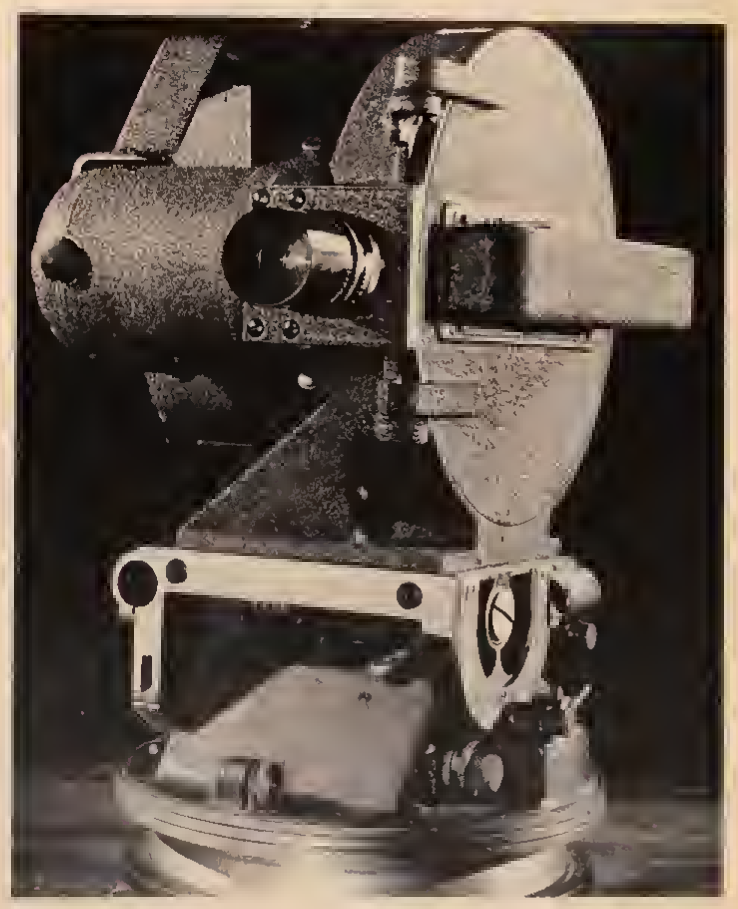
Design engineers are making wide use of the Fastax. Models are photographed during various stages of development and faults are detected and corrected as the work progresses.

The first Fastax camera to be designed employed 16mm film and took up to 4,000 pictures a second. The second used 8mm film and operated at up to twice the speed—8,000 pictures per second! When a wider angle was desired for ballistic studies a third Fastax was designed for 35mm half-frame wide-angle pictures. This camera gives 3,500 pictures a second and has an angle view of 40 degrees or a width of field of 71 feet when the camera is 100 feet from the subject. The Fastax looks much like a conventional motion picture camera. The rotary shutter, however, is missing and in its place, between the lens and the film plane, is a glass prism—four-sided for 16mm and 35mm film or eight-sided for 8mm film, with opposing faces parallel. An exposure slit is provided ahead of and behind the prism. The prism rotates while taking pictures and acts both to provide synchronous relationship between the images and the fast moving film and to perform the function of a shutter. The light rays picked up by the lens pass through the prism and are focused on the surface of the film on the driving sprocket. As the prism rotates the image moves with film across the exposure slit. As soon as the prism has rotated to the point where the light rays might strike two adjoining prism faces, the prism housing performs the function of a barrel shutter, blocking the light from the film and so forming the frame line.

View Finder Attached to Door

In the 8mm and 16mm cameras the view finder is attached to the door. A

(Continued on Page 22)



FASTAX HIGH SPEED CAMERA

Weighing forty pounds the new camera fits on any standard flat-top tripod such as those used in commercial motion picture production. The lens is a standard 2 inch cine lens.

STAGING MUSICAL ROUTINES FOR THE CAMERA

By HERB A. LIGHTMAN

TO the average movie goer, comfortably seated in the loges of his local theatre enjoying one of our current crop of color-musical extravaganzas, the lively spectacle that unfolds before his eyes may seem like a smooth, effortless thing that, somehow, casually found its way onto gorgeous Technicolor.

Actually, the amount of work which goes into blending this mixture of music, movement and celluloid, is enough to make the average stevedore content to go back to "towing that line and moving that bale." It is a real chore.

The men who have charge of staging these musical routines for the camera are known, modestly enough, as "dance directors," although the term falls far short of describing their actual duties. True, they compose dance steps and create choreography for every kind of terpsichore from Virginal reels to Russian ballet, but in addition, most of them also stage song specialties, band numbers, and comedy skits with music—sequences which could scarcely be called *dance* routines.

Technical Know-how Needed

Time was, when a dance director would coach a chorus of cuties in a series of high kicks, herd them onto a sound stage, turn them over to the cameraman, and (washing his hands of the whole thing) say "Take 'em away, Bud—they're all yours."

But since then the picture has changed. Today the dance director is a serious technician who thinks in terms of *camera* and plans his routines with a careful eye for cinematic values. He is concerned, not only with *pirouettes* and *entrechats*, but with *camera angles* and *outs*. His job begins long before the cameras turn on the sound stage, and it ends only after the picture has been finally edited and is ready for release.

Jack Donohue, M-G-M dance director responsible for the musical numbers in such films as "Bathing Beauty," "Easy to Wed," and "It Happened in Brooklyn," points out that the task of the dance director is artistic as well as mechanical. "Putting a musical number onto film is an exacting procedure," he explains. "You are given certain basic elements with which to work: a camera, film, lights and actors. The effectiveness of the result depends upon how much imagination is used in blending these elements."

When Donohue, a veteran director of stage musicals, was first brought to Hollywood years ago to design dance numbers for the screen, he found that the task required a thorough knowledge of camera mechanics. He was no longer obliged merely to fit a musical spectacle within a proscenium arch, but to present it selectively for the exacting eye of the motion picture lens. He acquired his knowledge of camera by observation, by asking questions of expert technicians, and by actually experimenting with the medium itself.

Study and Paper Work

Ever since those early days, Donohue has continued to be a serious student of cinema technique, studying every motion picture he could possibly see, and building an extensive file of cinematic ideas, all neatly catalogued for ready reference. These ideas he clips from newspapers, magazines, and cartoon books. They include compositional patterns (subdivided into long shots, medium, and close-ups) as well as ideas for costumes, dialogue, and bits of "business."

He points out, however, that when working on a feature, the basic idea for a musical number comes from the lyric of the song, which, in turn, is (or should be) motivated by the situations of the story.

In planning the numbers for a film, he first reads the script thoroughly, absorbing its atmosphere and visualizing the characters and locale. He then listens to the music and lyrics of the songs, noting how they fit into the story pattern. With this background well established actual planning of the production numbers begins. It is at this point that

Left—Preparing to shoot a song number staged around a swimming pool, the dance director rides the camera boom. Right—The cameraman checks his set up before filming a song and dance number in Technicolor. Such sequences require precise timing and smooth camera movement.

the first conference with the Director of Cinematography is held

In the course of this conference, general camera approaches to the various routines are discussed, and each number is then broken down on a chart showing in detail how specific phases are to be treated cinematically. In this planning, they are careful to work for variety, so that each number is given a different treatment from the one that preceded it

When actual rehearsals of the dances are well underway, the dance director uses a pocket view-finder to line up the various shots, and four or five days before shooting begins, he meets once more with the cinematographer for a final check of the shots planned At this time, the cinematographer suggests ways of executing specific shots, methods of cutting from one shot to another, and devices useful in building a smooth continuity pattern

During the remaining three or four days before shooting, the dance director perfects his choreography, smooths out the action patterns, and makes any changes that must be made for the camera, so that when the first day of actual production arrives, he and the cameraman are perfectly in accord and able to stage the routines for their best possible effect

Working on the Set

This planning routine varies with individual dance directors, as does procedure during actual shooting. Explaining his own method of working on the set, Donohue points out that no one man can possibly check all phases of a number by himself. During filming, he personally watches the movements of the camera and the principals His assistant watches the immediate background to the principals, and the assistant director watches the general background He cues the *boom* himself, since he knows the music thoroughly, and can anticipate the various movements After the *take* he checks with the assistants and the camera operator to see that everything was recorded as planned

From the standpoint of camera mechanics, there are a number of techniques that apply specifically to the filming of musical sequences Basically, the camera must move on the *beat* of the music—and this is a faculty the operator develops by listening to the musical numbers over and over again until he can *feel* the rhythm In the filming of band numbers it is often necessary to *whip* the lens from one instrument to another, synchronizing the camera movement with the rhythm of the song This type of number is one of the most difficult to film in a smooth and original manner "After all," Donohue explains, "It would seem that there is only so much that can be done with a bunch of musicians statically placed But the pace and tempo are achieved by dynamic use of camera movement and lively cutting from one shot to another Staging this sort of thing is a stimulating challenge"

Certain technical taboos also exist in the filming of musical numbers The camera operator, for instance, must be careful not to *pan* his camera cross a striped background, since this results in a kind of "picket fence" effect Similarly, he cannot follow a player in close-up with too long a focal length lens, since the background tends to blur in a manner that is distracting In shooting a set which contains high perpendicular columns, he must not use too wide an angle of lens, because the distortion will cause the columns to look as if they are falling over, or bending at the top

Knowing Where to Cut

Perhaps one of the most difficult phases of designing musical routines for the camera is planning where to cut from one scene to another The object in making a cut is to change point of view so smoothly that the audience will not be conscious of any sort of jump in pace or action

For this reason, it is not wise to cut while the camera is in motion Similarly, in cutting from a long or medium shot to a close-up of a single player, it is best to first maneuver that player into a relatively isolated position, so that in close-up there will be no distracting background movement

Basically, there are three types of movement in a musical number First, a pattern in which the player moves and the camera remains stationary. Secondly, one in which the camera moves and the player remains static And, thirdly, a pattern in which the camera and the player move at the same time The third type of pattern is usually the smoothest, since the movement of the player detracts from the obvious movement of the camera For this reason, a player is often given a bit of action just so the camera, following him, will be able to make a smooth change of angle

Harry Stradling, A.S.C., who has filmed some of M-G-M's most ambitious color musicals, maintains that successful handling of this type of film is mostly a matter of having the camera in the right place at the right time "You know that the camera boom is to start at a certain point and end up at another point," he explains, "but making sure that it does so on a certain beat of the music can be a very ticklish proposition In lighting the set for such a number, you have to realize that you are lighting for a fluid camera"

Stradling's operator, Sam Levitt, a veteran of such films as "Bathing Beauty," "Anchors Away," and "Holiday in Mexico," recalls some of the unusual routines he has been called upon to wrestle with. In "Bathing Beauty," for instance, there was a water ballet in which the camera continually followed players into, out of, and under the water all in a single shot. For this sequence, Levitt, clad in a diving suit, had to synchronize the specially water

(Continued on Page 32)

Left—Jack Donohue, M-G-M dance director coaches actor Van Johnson and his partner in a dance routine for "Romance of Rosy Ridge" Right—Before the take Donohue goes into a last minute technical huddle with camera-operator Sam Levitt and Director of Cinematography Harry Stradling, A.S.C.

DEVELOPMENT OF THE CINEMATOGRAPHIC ART

By JOSEPH V. NOBLE

IN a little more than half a century the motion picture has progressed from the status of a catchpenny side show to the realm of big business. At the present day motion pictures is the fifth largest industry in the United States. The phenominal growth of this industry may be attributed to many causes, among them the universal appeal of the medium, and excellent merchandising. However, the artistry which creates the moving images certainly must also receive due credit.

This artistry did not come into being overnight with the birth of the industry, but was the result of a long and rather round-about development. The purpose of this article is to trace this development of the cameraman's art, to point out the situations which hindered the progress, and then perhaps to indicate the course for the future.

To the pioneers and inventors of the motion picture, it was sufficient that the pictures moved. Edison, who with Dickson produced the first motion pictures in 1889, had intended to invent a device which would supplement with sight the already perfected sound device, the phonograph. Latham, Armat, Paul Melies, and Lumier perfected and modified Edison's basic work by placing emphasis on the projection of the moving images rather than on direct viewing. However, it is to be noted that all of these pioneers performed their own camera work, and that their aim was simply to record an image. To the audiences, spellbound by the novelty, the "galloping tintypes" were interesting primarily in that they moved. It is worth noting that the public failed to recognize the potentialities of the medium and were attracted only to the obvious new element, movement. In a similar manner the public in 1839 had noted in Daguerre's invention of photography that the process had the ability to record detail instantaneously, even to the "last blade of grass" a superficial point, and had overlooked its unique ability to reproduce a true permanent record of the scene or event.

In the decade following Edison's first demonstration motion pictures were widely exhibited. The films were produced by the Edison Company and others, and the prints were sold. All photographic work was done by the producing companies, for no motion picture cameras were offered for sale. In fact, cameras were closely guarded secrets as rival companies constantly attempted to steal or copy the mechanisms. Consequently, the camera work was done by some trusted member of the firm who could both guard and repair the camera. Obviously under these conditions the art of cinematography was non-existant.

A further handicap at this time was the conception that the camera was simply a recording machine, a device to produce "living pictures" in imitation of stage plays. Consequently, the camera was set up at eye level at a distance great enough to encompass the entire acting area, and the complete presentation was filmed from this position. As a further precaution, it was customary for the cameraman to mark on the floor with chalk the side limits of his shot in order that the actors might not step outside of the picture. A third line was usually drawn on the floor some distance in front of the camera. The actors were not supposed to cross this boundary or else they would be out of focus. Such was the iron clad cinematography of the turn of the century.

One of the largest television companies now in operation has seriously suggested this chalk line plan as a method of entirely dispensing with cameramen for its shows. History does repeat itself.

In 1900, Melies departed from the current practice of shooting all the action in one scene, and introduced film stories told in a series of "artificially arranged scenes." He still retained the technique of confining the action within the scene.

Earliest Special Effects. Le Dessous Microscopic, Circa 1902. France.

Photographed stage play. Queen Elizabeth. 1912. France.

Expressionism The Cabinet of Doctor Caligari 1919 Germany

Intercutting Birth of a Nation 1915 United States

as if it were a stage presentation, or as he named them "motion tableaux." Melies by profession was a magician, and he looked upon the camera as an instrument with which he could produce illusions He is largely responsible for the development of double exposures, masks, stop motions, reverse shooting, slow and fast motion, animation, fades, and dissolves His films "Cinderella" and "The Trip to the Moon" are excellent examples of the earliest use of special effect cinematography

The development of the closeup and medium shots freed the camera from the theatricalized tradition. The closeup had been accomplished as early as 1893 by Edison and was used frequently However, it was not until Porter's production in 1902 of "The Life of an American Fireman" that the closeup became an intergrated shot in the development of a narrative With this film the motion picture began to break away from the theatre technique, and to develop a new art form Griffith and Bitzer in 1915 made outstanding use of this technique with the production of "The Birth of a Nation," and continued the development of intercutting closeups with longer shots of the action Eisenstein and Tisse, still later in 1925, were influenced by Griffith's juxtaposition of shots and brought this method of shooting and editing to its greatest perfection in "The Battleship Potemkin"

The technical resources at the cameraman's command during the first decade of the twentieth century were primitive and inadequate This was a result of compromises in quality in order to reduce operating costs, and the lack of standards and free interchange of ideas in equipment design Secrecy has always been exercised in the motion picture industry probably stemming from the early patent battles for monopoly control The lack of standards hindered the interchangability of films and equipment and further retarded development by increasing costs It was not until the establishment of the Society of Motion Picture Engineers in 1916 that real progress was made in this respect Further progress, encompassing a broader field occurred in 1920 when the American Society of Cinematographers began the publishing of "The American Cinematographer," a magazine "devoted to the cameramen."

In the 1890's Edison's camera had been driven by an electric motor at a rate of forty frames per second. The financial interests considered this a great waste of film, and as a result pictures were hand cranked at the rate of sixteen frames per second The public nicknamed the pictures "the flickers," for good reason, but still continued to pay their money at the box-office.

Cameramen were now recruited from a new source The producers looked at the situation from a practical viewpoint, ignored art, and promoted enterprising laboratory workers to the role of cameramen This at least helped guarantee well exposed negatives Cameras were also getting heavier with the addition of prises, four way mats, etc. It was at this time that the description of a good cameraman was phrased as "a man with a strong back and a weak mind."

When a cameraman attempted to

(Continued on Page 25)

Pictorial imitation Die Nibelungen 1923 Germany

Documentary "The Wave 1935 Mexico

ACES of the CAMERA

WINTON HOCH, A. S. C.

By W. G. C. BOSCO

WINTON HOCH, A.S.C. (it rhymes with coke) is that *rara avis*, a man who combines the advanced technical ability of the scientist with the imagination, the skill and the consummate artistry that goes to make a Director of Cinematography. And while his production credits do not as yet rank him in the public mind with some of the other camera aces, it is not because he lacks any of the qualities that go to make up a great production cameraman but rather because he is the victim of his own technical virtuosity.

A graduate physicist of the California Institute of Technology, an Associate of the Research Council of the Academy of Motion Picture Arts and Sciences, a member of the Society of Motion Picture Engineers whose authoritative papers—including that on Technicolor Motion Picture Photography, a classic in its field which has been published by the S M P E in, "Techniques of Motion Picture Production"—are accepted with respectful deference by the technical intelligentsia of the industry, Winton Hoch is one of those members of the American Society of Cinematographers who have helped to make the name of that organization synonymous with the highest achievements and the most distinguished talent in the world of motion picture photography.

This writer regrets the limitations of his own technical understanding which makes it impossible for him to do justice to, or adequately acknowledge the technical contributions and accomplishments of the subject of this month's brief biography. But for those with an appreciation for such things the following summary will be sufficient guide to the professional stature of Winton Hoch.

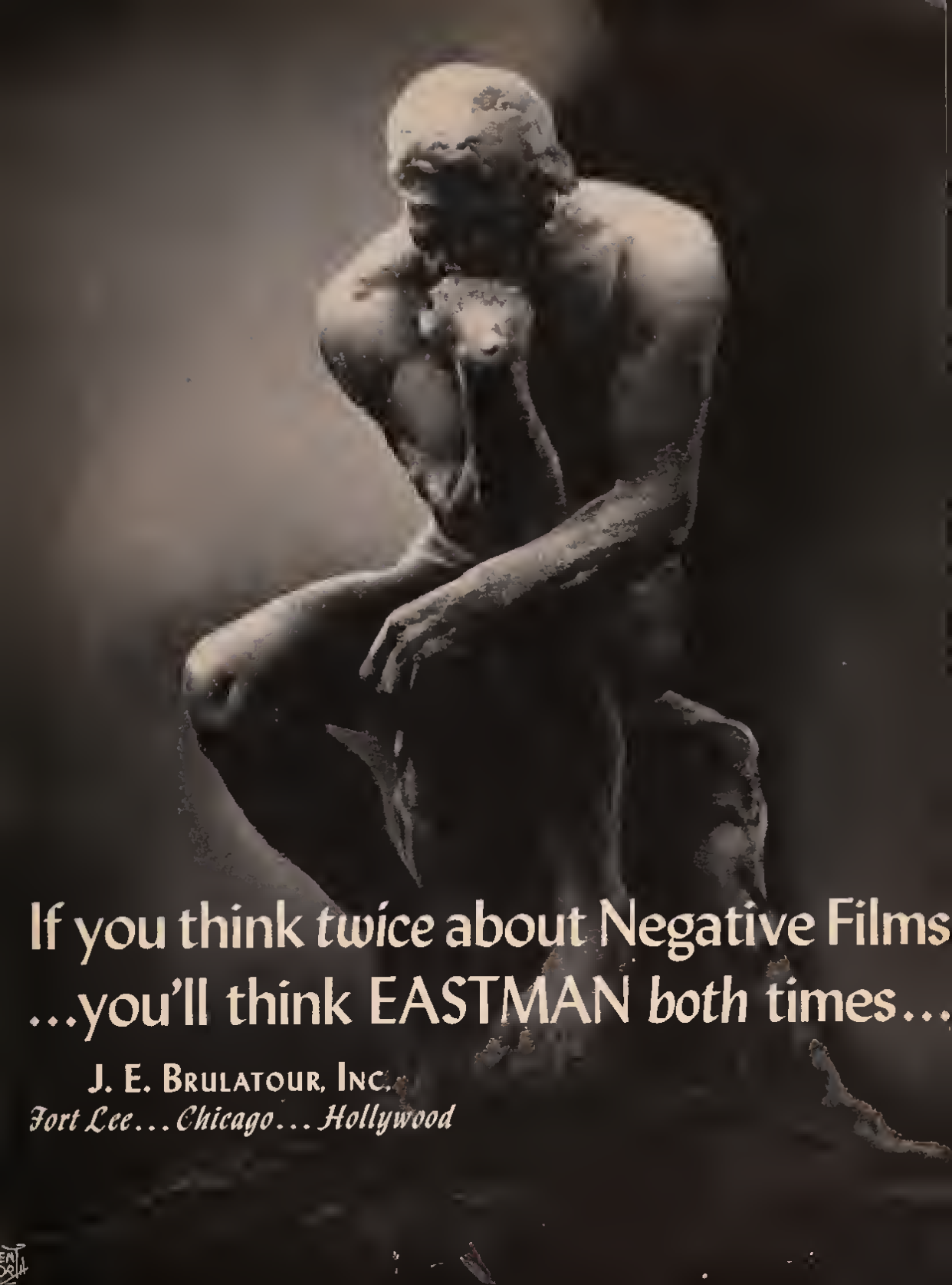
In 1931 he was employed by Technicolor Corporation, who still retain his services, as a research physicist to work on and assist in the perfecting of the 3-color camera. In the field of camera equipment design, he created and obtained a patent for the Universal finder that is now standard equipment on all Technicolor cameras; worked on the design and calibration of an optical printer modification, and the manufacture and testing of camera filters, worked on development of methods for the surfacing, cementing and mounting of camera prisms; and because of his virtuosity was called upon to devise procedures for the testing and calibration of lenses, the testing of dyes, the testing of lighting units, and the testing and cross comparison of new emulsions and film types.

He had a major part in establishing the standards and tolerances for the incandescent and arclight correcting filters that are now used for Technicolor photography, and he adapted, designed, tested and built the optical relay system that is now so extensively used in background projection, the type of unit that is standard equipment at Selznick, Paramount, Disney, R-K-O, the Army Air Forces Hal Roach Unit, and the Navy Photographic Science Laboratory, Washington, D. C.

The story of each one of these accomplishments, of science applied with patience and imagination to push the known further into the unknown, is worthy of a chapter in the history of the technical development of the motion picture. The record as a whole reflects a formidable contribution to the industry, and is attested by the motion picture screens of the world. The Academy of Motion Picture Arts and Sciences took cognizance of this record of accomplishment, and in 1939 honored him with an Award for Technical Achievement.

Win began to cut his eye-teeth as an operating first cameraman on a series

(Continued on Page 31)


If you think *twice* about Negative Films
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The Cinema Workshop

(For Semi-Professional and Amateur Production)

7. Standard Interior Lighting

By CHARLES LORING

WHEN we shoot exterior sequences, photographic light is provided by the sun, and our task is simply to control the light in an effective manner. But when we move indoors to shoot interior sequences, we are suddenly confronted with the problem of *lighting*, and we must work with units of artificial illumination.

Aside from providing enough light to expose the emulsion, the function of interior lighting is to bring out the form and detail of the subject matter to best advantage. For this reason, lighting should be keyed to the mood of the action, to the locale, and to the established source of light. This latter point is very important, since an audience will sense whether or not the main or *key* light is coming from the right direction. If, for instance, the long shot of a room should show sunlight streaming in a large window, one would naturally expect the brightest light falling on the subject to be coming from the direction of that window.

Units of Interior Lighting

For the home movie maker, lighting units may consist simply of ordinary flood bulbs mounted in cardboard or metal reflectors of the "dishpan" variety. But for the advanced amateur or semi-professional moviemaker, there are available more advanced units, each with its own special use in lighting.

First of all, there are *floodlights*, composed of bulbs of 1, 2, or 4 brightness, which are screwed into large concave reflectors surfaced either in white or aluminum. These are useful for general set illumination and for boosting the overall key of a set-up. Used exclusively, they provide a rather harsh quality of light.

Next, there is the *broad*, a professional type of diffused floodlight composed of a bulb mounted in a rectangular metal housing with glass diffusion slide in front. This is an extremely soft type of light, very useful to fill shadows in close-up, or to provide an overall glow in low-key sequences.

Spotlights fall into several categories according to size, the largest being the *senior*, then the *junior*, then *keglight*, and finally the tiny "Dinky Inky." All of these lights have adjustable beams that can be narrowed down to a small, concentrated spot, or broadened out to a flood effect.

Strip-lights, as the name implies, are composed of a number of bulbs mounted side by side in a metal trough type of reflector. They are useful in illuminating backdrops or artificial backgrounds.

The *arc lights* which burn carbon, fall into a special category. They produce a harsh, brilliant light that effectively simulates sunlight or moonlight. Arc lights are generally used only by professional film producers.

No matter what kind of lighting units the producer has available, it is up to him to make the best possible use of his equipment. Here again, the effect depends not so much upon the kind of equipment as how it is used.

Basic Lighting Terms

In a discussion of lighting, a few basic terms should be defined so that there will be no misunderstanding of the expressions used.

The term most frequently used is *key light*. This refers to the strongest light in the scene and, as we have pointed out, it is dependent upon the main visible source of illumination. The direction of the *key light* should always remain the same throughout the sequence.

Fill light, refers to the illumination used to fill in the shadows created by the key light. It's intensity varies according to the degree of dramatic effect desired, but it is always of weaker intensity than the key light.

The term *front lighting* should be self-explanatory, since it refers to a key light placed directly in front of the subject. This type of lighting is rather undramatic in close-up, and it is better to use a less symmetrical pattern.

Back lighting refers to a light placed at the rear and above the subject, pointing downward. It is effective in creating separation between subject and background.

Side lighting (or *cross* lighting) has the key light aimed at the side of the subject's face, and it is very effective in lighting for character or dramatic effect, since it brings out the lines and contours of the face quite poignantly.

Top lighting is achieved by a light placed directly over the head of the subject, pointing downward. It is a very extreme kind of lighting when used without the proper fill.

Rim lighting refers to a light placed directly in back of the subject, but lower than a back light, so that the subject is outlined with a rim of light. This pattern is sometimes very effective when used with other units as fill.

There are variations on these basic patterns, each of which has its own special effect. But the patterns described above are standard set-ups with which the cinematographer begins.

Lighting Close-ups

In lighting a close-up, it is necessary to bring out the roundness of the subject's head, and to keep his hair and clothes from blending into the background. This effect is achieved partly by the use of backgrounds with suitable contrast, partly by modeled lighting for depth, as opposed to the flat effect of straightforward lighting.

In using top-light or back-light for separation, however, care must be taken that these lights are not too bright. Otherwise, the hair will have an artificial, burned-up appearance.

A good standard pattern of lighting for close-ups is as follows. The key light is placed a bit to one side of the camera, so that it falls on the face in what is known as "three quarter front light." The key light is pointed down toward the subject at about a 35 degree angle, being careful that the nose shadow doesn't extend too far down onto the lower lip.

To balance the key illumination, we use a diffused fill light placed at the subject's eye level. This fills in the otherwise harsh shadows about the eyes, nose, and neck. If a back-light is used for separation, it should fall on the shadow side of the head.

In lighting a *two-shot* of a man and a woman together, use a diffused fill light on the woman in order to soften and enhance her appearance. But the man should be lit with very little fill and perhaps a cross-light to enhance his masculinity.

Sometimes, instead of using back-light for separation, it is more realistic and effective to light the background behind the shadow side of the face, so that the contour will be effectively silhouetted. Also, a background of interesting shadows, if properly motivated, provide an attractive setting for the face in close-up.

Lighting the Set

The two most frequently used styles of general set lighting are *high key* and *low key*. We shall discuss low key quite thoroughly in the next installment of "The Cinema Workshop." At this point, however, just a word about high key. This is a style of illumination which is used to good effect in action pictures and sophisticated comedies, when a lively pace is called for. It is characterized by strong key light and a more intensified fill, so that contrast is cut down and brightness dominates. We do not mean to imply that high key lighting is flat. On the contrary, it has depth and modeling, but the contrast is not as extreme as it is in more dramatic types of set lighting.

(Continued on Page 29)

THE FILM INDUSTRY'S

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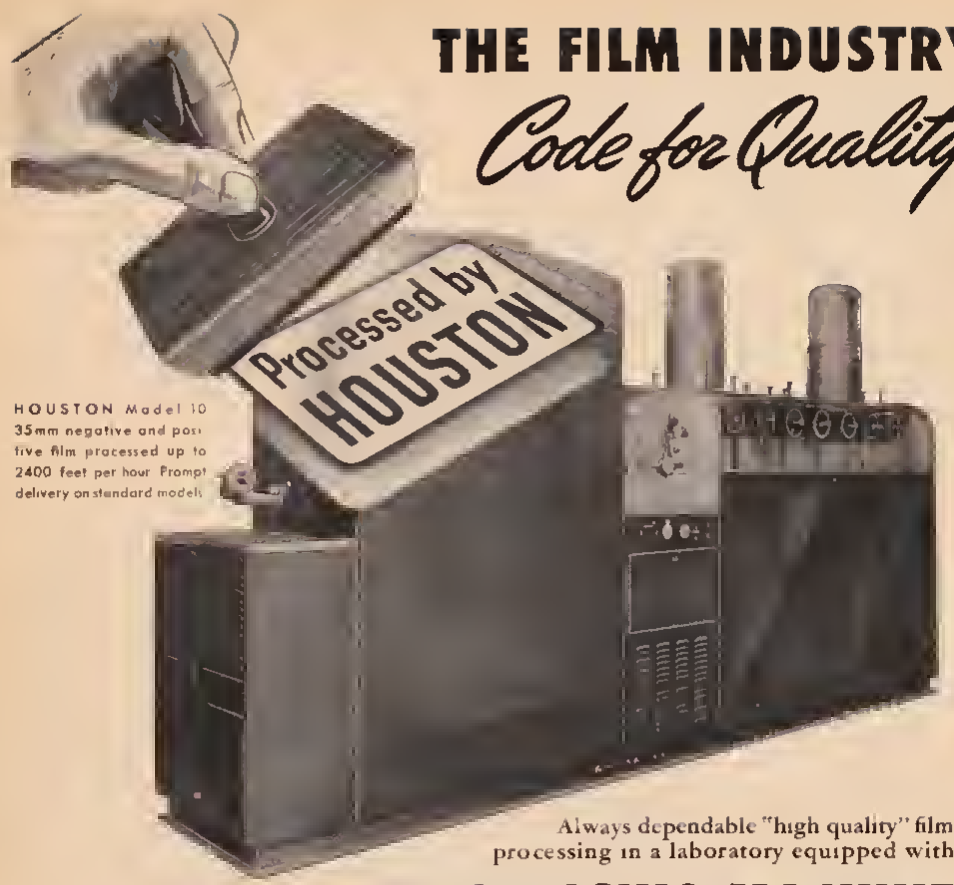

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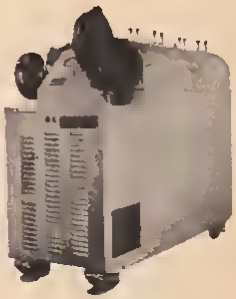

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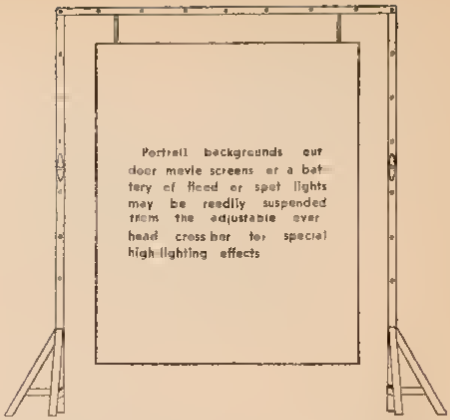
BUILD THIS PORTABLE BACK GROUND SUPPORT AND LIGHT STAND

By JAMES R. OSWALD


Portrait backgrounds out door movie screens or a battery of flood or spot lights may be readily suspended from the adjustable over head cross bar for special high-lighting effects

Long having felt the need for some sort of apparatus that would lend itself readily as a background support for indoor portraiture, and at the same time not prove too cumbersome for home use, for which it was intended, the unit outlined in this article was devised. In addition to providing a means of instantly interchanging backgrounds in a matter of seconds, those who have marvelled at the spectacular overhead lighting effects of the professionals, and who have longed to duplicate Hollywood without constructing intricate catwalks around their ceilings, will appreciate the convenience of suspending a battery of flood or spot lights from the adjustable overhead cross-beam.

Sturdily, yet lightly constructed for easy handling, the unit was built from six wooden clothes props, measuring ¾ x 1¼ inches x 8 feet in length, and procured from a local lumber yard at 25c apiece. Regular 1 x 2 inch green sash stock would have filled the bill very nicely, but the clothes props, having rounded edges, presented a more finished appearance, with a minimum amount of work. Consisting, basically, of two stands, each identical, and a cross-beam, which they support, the unit may be assembled or dismantled in a jiffy. Constructed on the "Erector Set" principle, both of the 8 foot vertical beams, and the horizontal cross-beam, measuring approximately 7 feet across, are drilled at 1 foot intervals with ½ inch holes, for maximum adjustability. In setting up, ⅜ inch carriage bolts, 2½ inches in length, hold the cross-beam securely in place at any desired level and with any preferred distance between the two supporting stands. Winged nuts enable the dismantling of the cross-beam without special tools. Hinges provide for the portability of the unit, while hooks and eyes hold the sections firmly in place.

On location, a battery of flood or spot lights may be suspended from the adjustable overhead cross bar

When used to full advantage, the unit extends to a height of 8 feet, with an expanse of approximately 7 feet between stands. Because of the 3-legged base construction of the stands, designed for maximum clearance between verticals, neither stand is entirely capable of supporting itself alone, except under very exacting conditions. When used in conjunction with its mate, however, and with the cross-beam that unites the two, it may be readily seen that each stand, by the very nature of its base construction, prevents the opposing stand from falling towards it, thereby strengthening the unit as a whole, and making it practically impossible for the apparatus to topple over. Hinges, permitting the collapsibility of the beams to almost one-half their full length, do not weaken the unit to prevent the use of heavy background material, such as plywood,

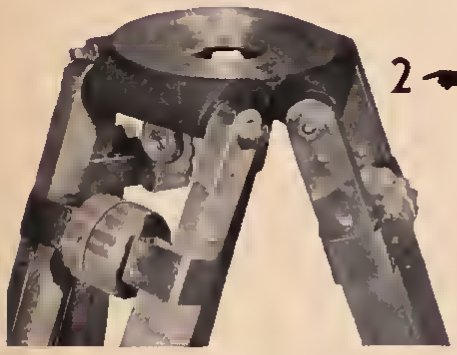
(Continued on Page 24)

Details of assembly. Left to right, winged nuts enable the dismantling of the cross beam without special tools. ⅜ in. carriage bolts 2½ inches in length hold the cross-bar securely in place. Hinges provide for portability of the unit, while hooks and eyes hold the sections firmly in place. Partial view of one stand showing base construction.

"PROFESSIONAL JUNIOR" *

Removable Head Tripods

1



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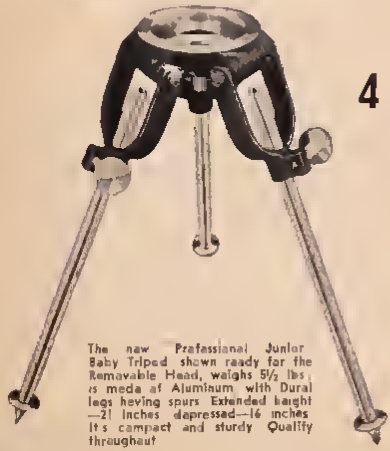
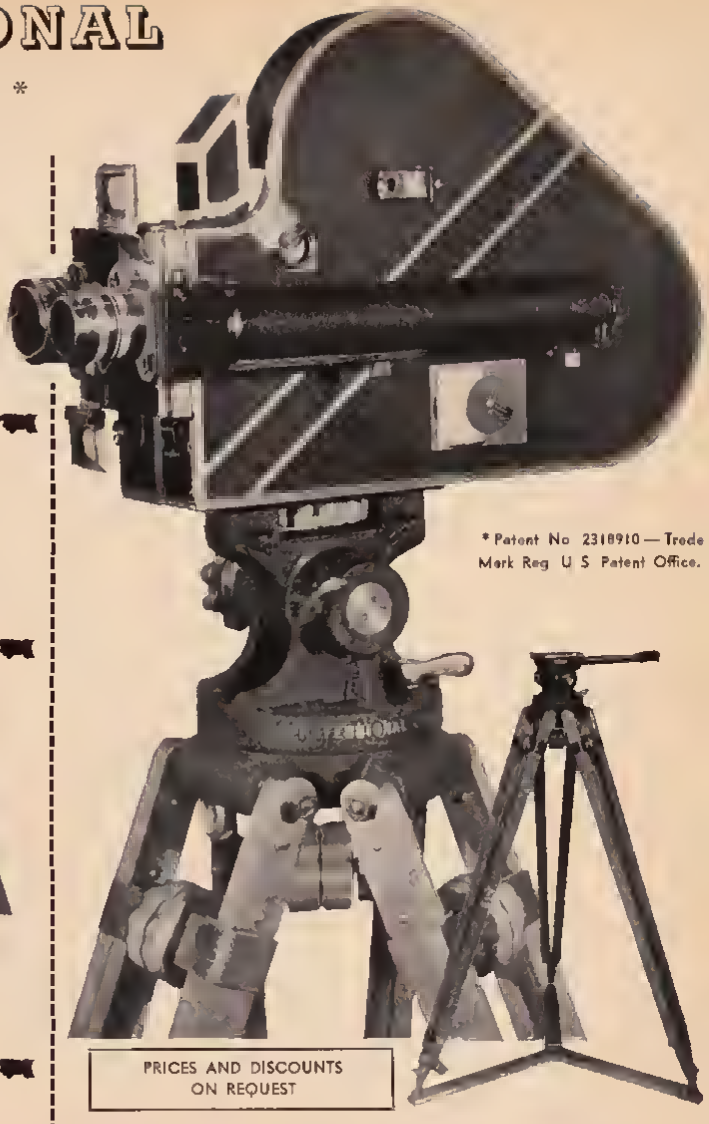


4

The new Professional Junior Baby Tripod shown ready for the Removable Head, weighs 5½ lbs; is made of Aluminum with Dural legs having spurs Extended height —21 inches depressed—16 inches It's compact and sturdy Quality throughout



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Acclaimed the finest for every picture taking use

The friction type head which is unconditionally guarenteed for 5 yeers gives super smooth 360° pan and 80° tilt action It is ramovable, can be easily mounted on our 'Hi-Hat" low base adaptor or Baby Professional Junior" Tripod base The large pin and trunnion assures long, dependable service A spirit level is built in Tha top plate can be set for 16 mm E K Cine Special, with or without motor; 35 mm DeVry and B & H Eyamo (with motor), and with or without alignment gauge. Also handles "view" still cameras

The standard size tripod base is sturdy "Spread leg' design affords utmost rigidity and quick positive height adjustments Complete tripod weighs 13½ lbs Low height at normal leg spread 42" Extended height 72" Legs are non warping wood have metal spur feet.

Adaptability here are illustrated (1) the friction type ramavable Professional Junior" tripod head that may be affixed to (2) the Standard Tripod Legs Base and (3) the Hi-Hat (Low Base Adaptor) and (4) the new all metal Baby tripod by simply fastening the finger grip head festening nut that is shown under it Note the positive locking, fluted, height-adjustment knobs and tie down rings of the Standard Tripod Base which is standing on a Triangle Triangles prevent slipping on or marring of polished floors

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.

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AMONG THE MOVIE CLUBS

Milwaukee Amateur

Group of past club productions were screened at the December 11th meeting of Amateur Movie Society of Milwaukee, held at the Red Arrow Club Films included "Blonde Interlude" (8 mm); "Oh Elmer!" (8 mm); "What Happened?" (16 mm), and "Redouble Trouble" (both 8 and 16 mm). Buffet lunch was served after the meeting

Current club production, being produced by both the 8 and 16 mm groups, is "The Paper Doll." William Rheingans is directing the 8 version, with cast including Martha Rosche, Al Wudtke, Lois Klug, and Mrs. Helen Pieske. Norville L. Schield directs the 16 mm. picture, with cast comprising Mabel Hanely, Walter Chappelle, Mary Ann Schield and Mrs. Rita Ann Bauer

Winners in the annual club film contest will be announced next month

Alhambra La Casa

M. D. Gardner was program chairman of the December 16th meeting of La Casa Movie Club of Alhambra, California, held at the YMCA building. Following most informative talk on "Progress in Color Photography" by C. E. Riley, film program was presented, including "Pacific Northwest and Canada," by Roy W. Boney, "An Old Christmas Custom," by Charles J. Ross, "Spring, Summer, Fall" by John Cook; "Flowers," by Miss Florence Ritzman, and "Jasper Highway," by Elva M. Walker

INFORMATION PLEASE

Program chairmen of amateur movie clubs might well consider the periodic presentation of Quiz Shows which have apparently caught on splendidly with members of several clubs around the country

Idea is to have members write out questions on practices and problems of motion picture photography, and present them at the special quiz show session. These questions are then discussed and answered by experienced members at a period during the evening to provide a most interesting and informative feature of the meeting. Interest of members in new ideas and desire for answers to some individual problems is best demonstrated by results of Brooklyn Amateur Cine Club recently, when 62% of the total membership responded with questions for the Master Minds to discuss and answer

Los Angeles Cinema

Alice Claire Hoffman was elected president of Los Angeles Cinema Club to serve during 1947, with Lorenzo del Riccio vice president, and Jack Shandler secretary-treasurer—all by unanimous vote of members at the organization's annual banquet held at the Los Angeles Breakfast Club on Decemebr 9th

Winners in the club's annual film contest were announced by the committee of judges, which comprised Ted Phillips, Edwin Schallert, Herbert E. Farmer, Karl Freund, ASC, Lorenzo del Riccio, James H. Mitchell, and Harry Burell. "Rambling Through British Columbia," by Carl H. Thomsen, was adjudged winner of first prize. Other winners in order were: "Trapper," by Charles J. Ross, "Rural Vermont," by Mildred Zimmerman; "Canadian Wonderland," by William Easley; "My Diary," by Wes Strause; "Glacier Park," by Ray McMillan; "Hollywood," by Leo Caloia; "Ballet On Ice," by Victor Jessen, "West Coast," by Robert Ernst; "Yosemite," by Jack Starkey, "Arizona Welcomes You," by Mrs. E. B. Kellam; "Lake in the High Sierras," by Arthur Sanger, and "Old Havana," by Andrew O'Rear. First three prize winning pictures were shown at the annual banquet meeting, with the others to be shown at later sessions.

San Francisco Cinema

Annual dinner and election of officers for 1947 highlighted the December 17th meeting of Cinema Club of San Francisco, held at the Women's City Club. Officers offered by the Nominating Committee include President, Charles D. Hudson, vice president, Benjamin Nichols, secretary, R. W. Arfsten; treasurer, Lloyd Littleton, and directors, Larry Duggan, E. G. Petherick, E. L. Sargeant

Program of the evening presented "Ramblings Thru the West," a selected group of kodachrome slides by Loring D. Powell, and "Canadian Rockies Vacation," 1,500 feet of kodachrome by Leon Gagne.

Philadelphia Cinema

Christmas meeting of the Philadelphia Cinema Club, held at Franklin Institute on December 10th, featured an all-8mm film program, which included "Christmas Packages" and "Christmas Tree," both prize-winning films by Walter I. Bruner, Jr.; "Paintings by Jack Frost," by Mrs. Frank Hirst; and "The Boss Comes to Dinner," ACL prize-winner by Ryne Zimmerman of Milwaukee.

Roland Root delivered a talk and discussion on "Lighting the Christmas Scene," accentuating indoor lighting technique for movies of the yule season. Musical selections were presented by Claire Rasch and Elizabeth Jervis.

St. Louis Amateur

December 10th meeting of Amateur Motion Picture Club of St. Louis was held at the Roosevelt hotel, providing film program which included "Saskatchewan," 800 ft. in 16 mm. by Harold Davidson of Minneapolis, "The Large Springs of Missouri," by William F. Gross; and "Lincoln's New Salem," by Lon Wadman. Final feature was a quiz show period, in which member questions on motion picture photographic techniques and problems were answered by committee of experienced members

St. Louis Amateur's 11th anniversary show has been announced for February 25th, while another in the series of popular four minute contests—in which members enter reels running maximum of four minutes for consideration is planned for January.

Los Angeles Eight

Annual banquet and film contest of Los Angeles Eight MM Club was held at Scully's on evening of December 7th, at which time presentation of the 1947 officers was made. Total of 19 splendid prizes were donated for the contest, in addition to the Club Grand Prize Trophy, Horton Vacation Trophy, and the Babb Achievement Trophy

First three winners in the annual contest were "Our Vacation, 1946," by Paul Cramer, "How to Win Friends and Influence People," by Fred Evans; and "Sunday Holiday," by John E. Walter. Those submitting films for the contest included Adolf Apel, Robert Beazell, John Boaz, Mildred Caldwell, Stanley Clemens, Paul Cramer, Ward Dudley, Fred Evans, Sylvia Fairley, Dow Garlock, Al Larsen, Joseph Savel, Bion Vogel, and John E. Walter.

Oakland Camera

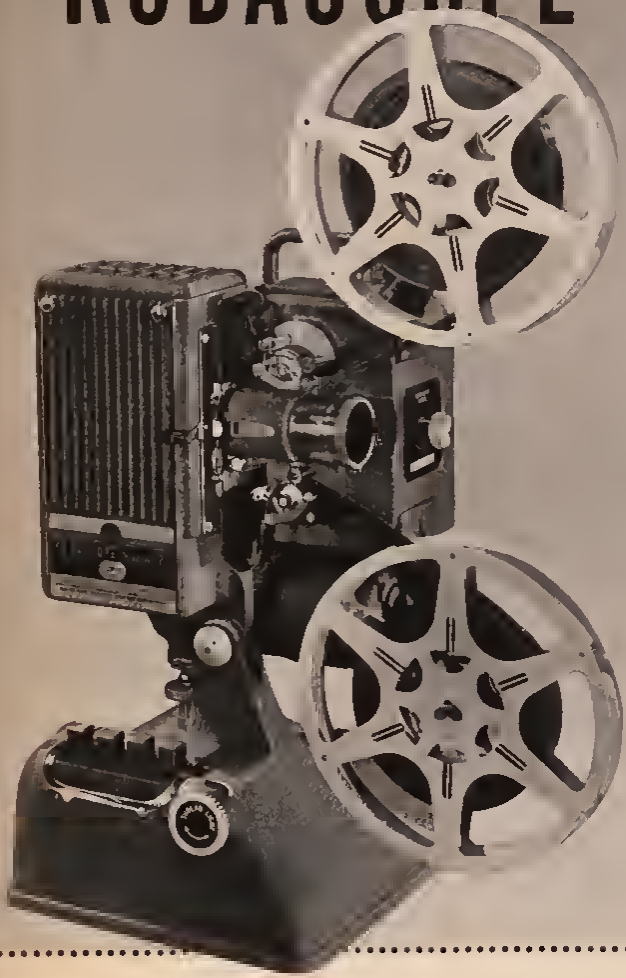
Oakland Camera Club is organizing a section on motion picture photography as part of its expanding activities. Initial group meeting was held at Chabot School, with about 75 interested movie makers attending to get the section off to a fine start

Dr. Numa P. Dunne will supervise the movie section of the Oakland Camera Club, and has outlined a program for initial meetings which will comprise a complete course in the fundamentals of movie making and the fundamentals of camera work.

At the December 10th meeting, lecture was presented detailing the different types of movies, their significance in both the commercial and amateur fields, and significance to the amateur. In addition, several different types of 8 and 16 mm. cameras were demonstrated, and two films were exhibited

(More Club News on Page 33)

KODASCOPE SIXTEEN-20



Peak Projection Performance— Under Finger-Tip Control

KODASCOPE SIXTEEN-20 combines top notch performance with outstanding simplicity of operation. Major controls are centered on a single, indirectly illuminated *push-button* panel. Finger-tip pressure starts the projector . another button lights the lamp . the "reverse" button rewinds the reel when the show is over. And other operations are as simple. The Cordomatic power cord winds into the projector base when you press the release . . easy-action tilting and framing controls and wide-opening sprockets and film gate simplify threading and picture alignment. Yes, with Kodascope Sixteen-20, the projectionist can really take it easy.

And there are many other features—adjustable speed . . "still-picture" control . . reverse projection . . built-in thread light . . . vertical tandem claw that permits silent projection of 16mm. sound film . . . enclosed drive shafts . . convenient lamp inspection and alignment facilities . . . full Underwriter approval for safe 100-125 volt, A.C. or D.C. operation, with lamps up to 1000 watts. $225—with 750-watt lamp, 2-inch *f*/1.6 lens, and carrying case.

See your Kodak dealer. Ask him, too, about Kodascope Sixteen-10, with comparable lens-lamp versatility, $115.

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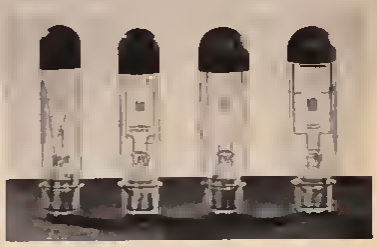
24 LENS-LAMP COMBINATIONS

The *right* lens . . . the *right* lamp—for wonderful showings in home, clubroom, or auditorium

BIG MOVIES . . . with exactly the right illumination . . . whatever the Kodascope-to-screen distance—that's "tailor-made projection," a Kodascope feature that lets you match equipment to audience size. The 2-inch *f*/1.6 lens and 750-watt lamp are just right for average use. And for unusual conditions, you can switch to any of five accessory lenses . . . any of three accessory lamps—for *large* movies even from short "throws" . . . *brilliant* movies even from well back.

Still another "Sixteen-20" advantage—every glass-air surface of projector and condenser lenses is *Lumenized*—coated for finer definition, greater contrast, improved colors . . . and larger screenings. Because *Lumenizing* ups light transmission as much as 40%, you can show sparkling 16mm. movies on screens up to ten feet in width!



Any of these interchangeable lamps—including one of 1000 watts—can be combined with any of these lenses. Result—"tailor-made projection" . . . your choice of 24 lens-lamp combinations

Kodak

U S C football squad members sit in darkened dressing room at half time to view 16 mm movies of the first half action and listen to Coach Jeff Cravath point out imperfections of play

Coach Greasy Neale of the professional Philadelphia Eagles sets up a Filmo projector to run off pictures of previous games aboard a transport plane for the team's next game

16mm. Films For Grid Instruction

Houston portable film processing machine develops pictures of U S C grid games within 10 minutes for showing to team at half time Elbert Baldridge and Beverly Normanly are attaching film magazine

Purchase of a new Houston 16 mm film processing machine by the University of Southern California for use of its athletic and cinematography departments is being watched with interest by universities throughout the country

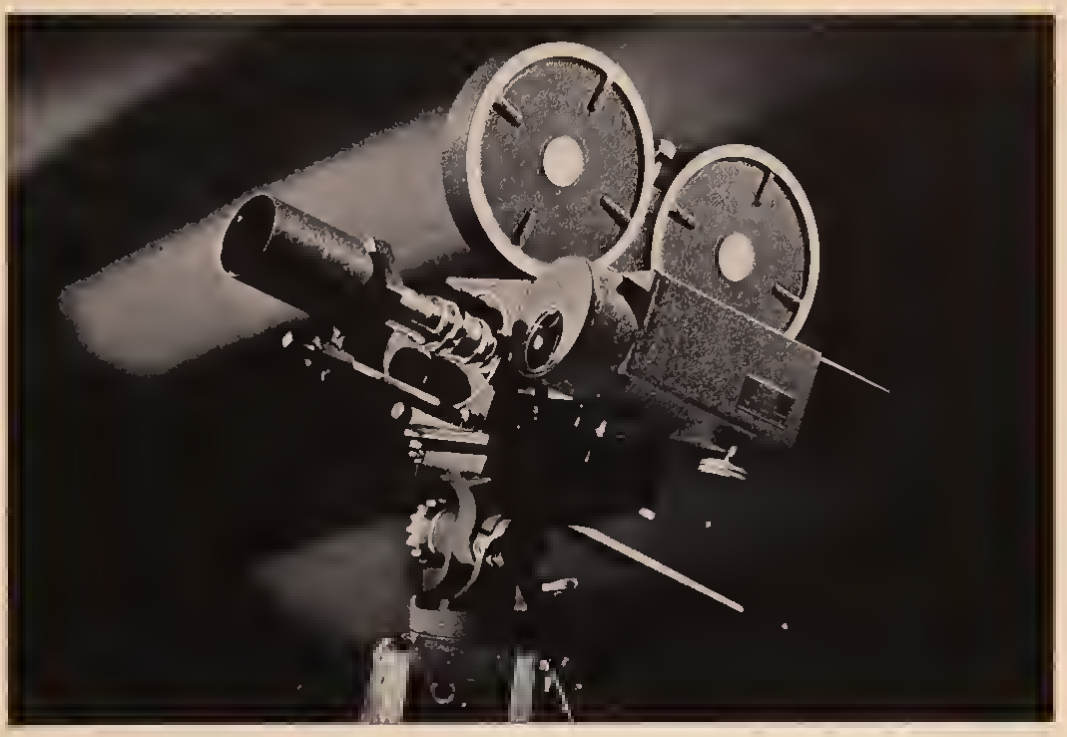
Although its prime usage is by the cinematography department, Southern California's Trojans are finding it of untold value in the field of football strategy The machine is geared at a speed which makes it possible to show first-half action at half time

This revolutionary innovation has suggested a number of ways that the film industry itself could make use of such portable equipment One of them, for example, is for on-location usage to check particularly difficult angles and shots which later would be taken and recorded on 35 mm sound film

Jeff Cravath, the Trojan's veteran coach, is believed to have been one of the first to visualize use of the machine as a means of obtaining perfection in football and other sports To back up his views, a demonstration was held during the university's last spring inter-squad contest in May Regular 16 mm. pictures were shot and rushed to the portable machine in "takes" When squad members retired to their dressing room mid-way of the game, they were amazed to see first-half pictures flashed on the screen Cravath was thus able to point out imperfections which resulted in mid-season caliber play during the second half

The machine, manufactured by the Houston Corp of Los Angeles, has many uses sports-wise other than in actual contest. Whether in football,

(Continued on Page 24)



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specifically designed

for 16-mm cinematography

These are some of the *unique* advantages you secure in the new Maurer 16-mm Professional Motion Picture Camera —

▶Single pull-down claw locates film *accurately*, without requiring additional movement of a registration pin. Perfect registration is insured, whether your film is fresh, or has been on your shelf six months or a year.

▶Rack-over mechanism permits *critical* focusing with high power microscope, as well as viewing the entire field, directly through the taking lens.

▶235° dissolving shutter is capable of making *automatic* fades or lap dissolves of forty frames or sixty-four frames, as well as manual fades.

▶View finder — anastigmatically corrected — gives the largest and clearest image of *all* erect image view finders.

▶*Gear-driven* magazines of 200-foot, 400-foot or 1200-foot capacity.

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Professional Motion Picture Cameras and Recording Equipment for the Production of Industrial, Educational and Training Films.

Fastax Camera

Continued from Page 7

right angle prism mounted on the inside of the door fits into the sprocket behind the viewing hole through the surface of the sprocket. A microscope objective in the finder tube is focused through this prism and an additional right angle prism directly onto the film plane. A light trap, operating by an external lever, prevents light from the finder from fogging the film while the camera is in operation.

The speed of the camera is governed by voltage applied to the motors and ranges from 150 frames per second to 8,000 pictures per second for the 8mm camera, 4,000 pictures per second for the 16mm camera, and 3,500 pictures per second for the 35mm camera, the 100-foot load of film lasts from 1½ seconds to 25 seconds, depending on the camera speed.

In order to take fully exposed pictures with available lenses and Super XX film at such speeds, it is necessary that light of extreme intensity be employed. However, by keeping the subject area to a small size, the focused, over volted filaments of a few 150-watt show window spotlights, having the sealed-beam reflector, are sufficient.

The versatility of the Fastax has enabled it to be used in many unusual applications. Black and white and Kodachrome film have been used successfully in the camera. Polarized light has been used in studying the stress and impact conditions in transparent materials. It is also possible to take high-speed pictures of self luminous objects, such as the filaments of incandescent lamps.

Other applications are being made at the Bell Telephone Laboratories using special Fastax high speed camera equipment to photograph continuous traces from a cathode ray oscilloscope.

FASTAX HIGH SPEED CAMERA

Strip A shows the burning out of a telephone fuse. Strip B shows the ram of a press descending on a plank of soft metal. Successive pictures show metals rising around the ram form a condenser cam. Strip C shows the burning out of a piece of fuse wire. Strip D shows the operation of the pulsing cam in a telephone dial. Strip E shows the clapper of a telephone ringer striking the gong in the fourth picture, rebounding and striking it again in ninth picture and about to strike the other gong in last picture.

EK Lenses Lumenized; 8 mm. Editing Kits Back

As a major part of its program to extend the advantages of "Lumenizing"—Kodak's new, hard-surface, magnesium-fluoride lens coating—to its line of Cine-Kodaks and Kodascopes, the Eastman Kodak Company has announced that its Ciné Kodak Model 25 will now be supplied with Lumenized lens, and that the 2-inch f/2.5 lens, and the 2-inch f/1.6 lens for Kodascopes Models G, E, EE, Sixteen-10, Sixteen-20, and Sound Kodascope Model FS-10 are now Lumenized.

In addition, the following lenses are now Lumenized. 63mm. f/2.5 Ciné-Kodak lens and the 25mm f/1.9 Cine-Kodak lens for Cine-Kodak Magazine 8.

The Ciné-Kodak Editing Kit, 8mm., has also been announced as once again available in limited quantities. This kit contains rewind, splicer, movie viewer 8mm., and space for reels and cans up to 400-foot capacity—all packed in a carrying case covered with black Kodadur-

Lack President of ASA

Frederick R. Lack, vice president of Western Electric Company, has been elected president of the American Standards Association for 1947. Lack, formerly vice president of ASA, succeeds Henry B. Bryans. George H. Taber, Jr., will hold post of ASA vice president during the year.

Vets on B & H Payrolls

For the past several months, plants and branches of Bell & Howell Company have had more than 25 per cent of world war veterans employed, according to company announcement. As part of the program, B & H specializes in on-the-job training for the vets; many of whom acquired new skills while in service.

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How to keep kids at home — you ask? Wholesome, lively entertainment — the answer! Sound Movies . . . the kind of fun kids enjoy most. Thousands of sound films are now available to *you* . . . free, for rent, or purchase . . . jungle thrills, fine sports, opera . . . for teen-agers and grown-ups, too.

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STAINLESS PRODUCTS

Football Movies

(Continued from Page 20)

track, swimming, boxing or any other sport requiring specialized form or individual instruction, coaches will be able to show their proteges mistakes on the screen within a matter of minutes after they are committed.

The machine also is getting extensive usage at U.S.C.'s famous department of cinematography, under the direction of Harris Moore. Much of the department work is in connection with visual education, now a required course for all student teachers. The university's enrollment in this course is the largest on the Pacific Coast.

The compact automatic machine is the only portable equipment of its kind. It has a routine processing time of 10 minutes, the quality being variable with the speed used. Hundreds of these machines were used by the armed forces during the war. They were in world-wide operation, principally to provide immediate processing of films taken in combat and reconnaissance flights.

Penna. Grid Films

Having long since proven its value in the systematic coaching of football teams, visual education claims as one of its earliest and most thorough practitioners in that field the News Reel Laboratory of Philadelphia. Since 1924, when University of Pennsylvania athletic officials first availed themselves of the laboratory's services, the Philadelphia concern has handled an increasing volume of such work for schools, colleges, and professional football clubs in many parts of the country.

An example of how intensively the football films are used occurred recently when Coach "Greasy" Neale of the Philadelphia Eagles set up a Bell & Howell projector in the cabin of a TWA plane carrying the professional team to the West Coast. Films of previous games were projected en route, with Neale analyzing plays for the squad by way of preparation for the next encounter.

In filming the University of Pennsylvania games, Louis Kellman has used as much as 1800 feet of 16mm film in an afternoon, shooting at 32 frames per second with a Filmo camera.

Motion Picture Division of PSA Set Up

Details for the establishment of a motion picture division of the Photographic Society of America were completed at the recent PSA convention in Rochester, with Harris B. Tuttle elected chairman of the division for term of two years. Other officers of the section include Frank H. Richterkessing, vice-chairman; and John E. Allen, secretary-treasurer. Dr. Donald H. Miller, Richterkessing, and N. William Wright will function as chairmen of the western, central and eastern states divisions, respectively.

Initial PSA motion picture salon will be held in conjunction with the 1947 convention at Oklahoma City.

Wollensak Prices Hold

Photographic lenses and accessories manufactured by Wollensak Optical Company of Rochester will not be subject to price increases at the present time. This announcement was made recently by the company.

Portable Light Stand

(Continued from Page 16)

velvet, or other yard goods often desirable for photographic backgrounds. Similarly, your most expensive lighting units may be used with the assembly, with the assurance they will be amply supported.

If you have felt handicapped in your indoor picture taking activities because of undesirable backgrounds, and if the facilities have been lacking for those superb Hollywood high-lighting, back-lighting, and top-lighting effects, you'll enjoy building this inexpensive, practical, background support and light stand.

A short song about speed---

(PLUS A WORD ABOUT THAT "THEATER–LOOK!")

START singing right here—because here's where you learn about uncanny speed for indoor movies . . . and for work under poor lighting conditions. Here's a super speed film that gives your home movie scenes that sharp, clear "theater-look."

Want proof? Then just load your camera with Ansco Triple S Pan Film.

Now—look at those screen images you get—so distinct, so real—so lifelike—due in no small measure to Triple S Pan's long, smooth gradation scale.

And here's the best part of this song on speed—Triple S Pan Film also has wide latitude. You can shoot under adverse lighting conditions, and know that you have an extra margin of exposure safety. Shoot for that smart, clear, "theater-look" in your home movies. Use fast Triple S Pan film every time. **Ansco, Binghamton, New York.**

ASK FOR

Ansco

8 and 16 mm

TRIPLE S PAN FILM

Development Cinematic Art

(Continued from Page 11)

bring art into his work, being ignorant of the subject, he did so by a slavish imitation of a combination of the classic forms of painting, and the work of portrait photographers The motion picture embarked on a period of pictorial imitation

By 1916, Rembrandt lighting and composition were here to stay. Hitherto, light, either daylight or arc light, was considered only as a means to get the image onto the film For the first time lighting was being employed as a device to increase the artistry of the picture It was crudely done and scarcely understood It is said that the New York office of one company complained that a film employing contrasty lighting was unsalable due to the fact that only half of the actor's face was visible. When the office was informed that this effect was "Art" resulting from the use of Rembrandt lighting the film was given special advertising

A further pictorial influence was the use of extreme diffusion resulting from the placement of gauze, nets and wavey glass discs in front of the camera lens, or the use of special "pictorially soft" lenses. The devices eliminated detail in the scene, and the result was a series of blurred areas which smoothly blended together in patterns of light and shade not unlike the works of some of the French impressionist school of painters This also greatly simplified the problems of the cameraman in lighting screen personalities as the inaccuracies in the makeup and the lines of age were simply blurred over

The use of the diffusion disc laid greater emphasis on lighting and tonal composition Previously, the emphasis, due to the high resolving power of the standard lens, had been on line and texture

Cameras and camerawork had become more complicated by the close of the First World War, and many cameramen used assistants This system provided for a form of apprenticeship so that in due course of time the assistants became full fledged cameramen The assistants, however, were chosen primarily for their interest and enthusiasm

In 1919, expressionism which was being experienced in other art forms made its appearance in films with Wiene's "The Cabinet of Doctor Caligari" This required a type of cinematography which utilized weird lighting and distorted camera angles to create stylized psychological impressions of reality The emphasis was laid not on the depiction of actual scenes and objects, but on interpretation or expression of these scenes by means of the cameraman's inventive artistry It attempted to express the psychological essence of the subject

This period helped develop many of the devices of trick photography such as the distorting lens, etc.

The various styles of camera work continued and were brought to a high point of perfection Then in 1927 Warner Brothers introduced their Vitaphone feature sound picture with speech, "The Jazz Singer" The enthusiasm of the public for sound films put an abrupt close to silent productions The camera and cameraman were inclosed in an immobile sound proof booth. All camera movement ceased The lighting technique had to be modified in order that three or four cameras might simultaneously shoot the scene to provide the necessary long shots and closeups at the same time that the sound was recorded. This complicated procedure took precedence over creative endeavors

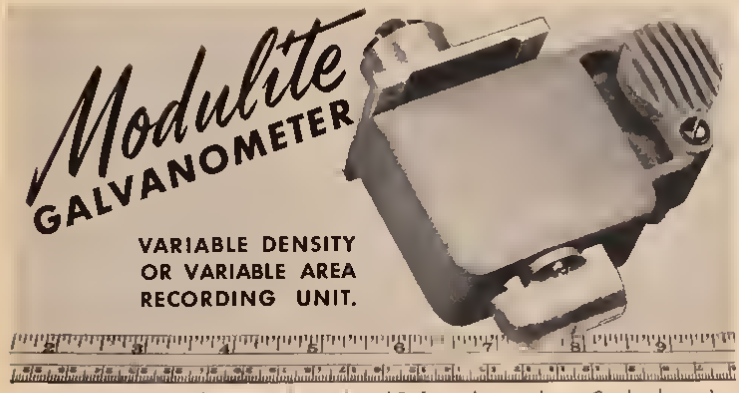
By 1930, blimps of sound proof material around the camera restored the mobility of the camera The cameraman then attempted to adopt his silent film technique to sound film production

At this time great strides were made in the development of motion picture equipment Interlocked motors and supersensitive films made possible the perfection of rear projection processes Color cinematography had been demonstrated in the form of Kinemacolor in 1908, but it was not until 1935 with the production of the three color Technicolor feature picture "Becky Sharp," that there was complete acceptance of color motion pictures. This entire period is characterized by inventions of equipment and refinements of technique rather than any pictorial style of its own

In the late 1930's, new demands were being made on the cinema The newsreel was becoming increasingly more popular As the public became more interested in civic and social responsibilities, governments of various countries produced special films These were in many cases a combination of film journalism, education, and propaganda. The Second World War gave great impetus to this style of film making and the result has come to be known as the "documentary film."

Naturally, a style of camera work developed for documentary productions. This camera work is based on realism, for documentary films appeal to the logic of men's minds, and the films must be believable or they fail Therefore, realism is stressed in camera angles, lighting, natural settings, and the absence of make-up

The roots of the documentary film movement reach back to Flaherty's "Nanook Of The North" produced in 1922, and extend through the government produced film "The River" supervised by Lorentz in 1937. These tendencies of documentary films are reflected in many present day feature produc-



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tions similar to de Rochemont's "The House on Ninety-Second Street."

The role of the cinematographer in the production of modern theatrical motion pictures is that of a highly skilled artist charged with a large part of the responsibility for the complete production However, due to the present economic system of film production, the Director of Photography is customarily assigned to a picture just before production starts This system does not allow him sufficient time to become an intergrated member of the creative group, and therefore, all too frequently he can contribute too little of an artistic nature to the film Experiments by foreign studios, documentary workers, and an increasing number of Hollywood film companies, reversing this procedure and having the cinematographer work with the director, writer, and producer during the pre-shooting planning stages, have almost without exception resulted in substantial improvements in quality It is to be realized, however, that this system is of greatest worth when serious artistic efforts are required, and that it will be of little benefit in the mass production of standardized program pictures The Director of Photography is potentially one of the most valuable of the group of creative workers in film production

As for predictions of films and film techniques of the future, it should be evident from a study of the history of motion pictures that they invariably reflect the culture and ideologies of the period Trends in motion pictures have their counterpart in the other arts These counterpart trends precede motion picture trends because the cinema is the most complicated of all art forms. Motion pictures therefore require a greater length of time to develop a style than other arts which are less communal in nature, and may be produced by one man Together with all true functional art forms, the motion picture will in the future continue to develop in order that it may entertain and enlighten its patrons

Mobile Service Units for Bell & Howell

Mobile service units designed to afford complete maintenance and repair facilities for Bell & Howell sound and silent motion picture projectors, will be established in various localities by special representatives of the company.

First mobile unit was delivered to Wayne Newman, service manager for Deseret Book Company of Salt Lake City, and others will be spotted in various sections of the country as soon as they are off the assembly line Each will be completely equipped with necessary machine tools, replacement units, spare parts, jigs, etc., for on-the-spot service of projector owners.

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Current Assignments of A.S.C. Members

As this issue of American Cinematographer goes to press, members of the A S C were engaged as Directors of Photography in the Hollywood studios as follows

Columbia

Charles Lawton, Jr., "The Lady From Shanghai" with Rita Hayworth, Orson Welles, Glenn Anders

Edward Cronjager, "Three Were Thoroughbreds," with Robert Young, Willard Parker, Marguerite Chapman, Akim Tamiroff

Vincent Farrar, "For the Love of Rusty," with Ted Donaldson, Tom Powers, Ann Doran

Burnett Guffey, "Assignment to Treasury," with Dick Powell, Signe Hasso, Mayha, Ludwig Donath, Vladimir Sokoloff

George Meehan, Jr., "Bulldog Drummond at Bay," with Ron Randell, Anita Louise, Terry Kilburn

Lucien Andriot, "The Corpse Came C O D," with George Brent, Joan Blondell, Adele Jergens

Metro-Goldwyn-Mayer

Hal Rosson, "To Kiss and to Keep," with Gene Kelly, Marie McDonald, Charles Winninger, Spring Byington, Jean Adair

Sidney Wagner, "The Romance of Rosy Ridge," with Van Johnson, Thomas Mitchell, Marshall Thompson, Selena Royle, Charles Dingle, Guy Kibbe

George Folsey, "Green Dolphin Street," with Lana Turner, Van Heflin, Donna Reed, Richard Hart, Frank Morgan, Edmund Gwenn, Reginald Owen

Harry Stradling, "Song of Love," with Katharine Hepburn, Paul Henreid, Robert Walker

Ray June, "The Birds and the Bees," (Technicolor), with Jeanette MacDonald, Jose Iturbi, Jane Powell, Ann Todd, Mary Eleanor Donahue, Edward Arnold, Harry Davenport

Robert Surtees, "The Rich, Full Life," with Elizabeth Taylor, George Murphy, Mary Astor, Spring Byington, Gene Lockhart

Monogram

Harry Neumann, "Black Gold" (Cinecolor), with Anthony Quinn, Katherine DeMille, Elyse Knox, Kane Richmond, Raymond Hatton

Jack Greenhalgh, "High Conquest," with Anna Lee, Gilbert Roland, Warren Douglas, Beulah Bondi

Henry Harp, "Violence," with Nancy Coleman, Michael O'Shea

Paramount

Lionel Linden, "Variety Girl," with Mary Hatcher, Olga San Juan, DeForest Kelley, Frank Ferguson

William Mellor, "Blaze of Noon," with Anne Baxter, William Holden, Sterling Hayden, Sonny Tufts, William Bendix, Howard da Silva, Jean Wallace

John Seitz, "Saigon," with Alan Ladd, Veronica Lake, Douglas Dick, Luther Adler, Morris Carnovsky, Luis Van Rooten

Leo Tover, "Deadlock" (Hal Wallis Prod.), with Burt Lancaster, Kirk Douglas, Wendell Corey, Kristine Miller

RKO

Nick Musuraca, "Out of the Past," with Robert Mitchum, Jane Greer, Virginia Huston, Richard Webb, Dickie Moore

Jack McKenzie, "Seven Keys to Baldpate," with Phillip Terry, Jacqueline White, Eduardo Ciannelli, Margaret Lindsay

Republic

Tony Gaudio, "Gallant Man," with Don Ameche, Catherine McLeod, Roscoe Karns, Joe Frisco

John Alton, "Wyoming," with William Elliott, Vera Ralston, John Carroll, Virginia Grey, George (Gabby) Hayes, Albert Dekker, Maria Ouspenskaya

Twentieth Century-Fox

Leon Shamroy, "Forever Amber" (Technicolor), with Linda Darnell, Cornel Wilde, Richard Greene, Glenn Langan, George Sanders, Lee G. Carroll, Margot Grahame

Harry Jackson, "Mother Wore Tights" (Technicolor), with Betty Grable, Dan Dailey, Jr., Mona Freeman, Anabel Shaw, Connie Marshall, Michael Dunne, William Frawley, Veda Ann Borg

Joe MacDonald, "Moss Rose," with Victor Mature, Peggy Cummins, Ethel Barrymore, Vincent Price, Margo Woods, Patricia Medina

Charles Clarke, "It's Only Human," with John Payne, Maureen O'Hara, Porter Hall, Philip Tonge, James Seay

Joseph LaShelle and Arthur Arling, "Captain From Castile" (Technicolor), with Tyrone Power, Jean Peters, Cesar Romero, Lee J. Cobb, John Sutton, Antonio Moreno, Thomas Gomez

Charles Lang, "The Ghost and Mrs. Muir," with Gene Tierney, Rex Harrison, Edna Best, Robert Coote

United Artists

Russell Harlan, "Red River" (Monterey Prod.), with John Wayne, Montgomery Clift, Walter Brennan, John Ireland, Joanne Dru, Noah Beery, Jr., Harry Carey

Victor Milner, "The Other Love" (Enterprise), with Barbara Stanwyck, David Niven, Richard Conte, Joan Lorring, Maria Palmer.

William Daniels, "Personal Column" (Hunt Stromberg Prod.), with George Sanders, Lucille Ball, Charles Coburn, Cedric Hardwicke, Alan Mowbray, Joseph Calleia, Alan Napier, George Zucco

Karl Struss, "Heaven Only Knows" (Nero Films), with Robert Cummings, Brian Donlevy, Joria Curtright, Helen Walker, Stuart Erwin

Franz Planer, "Vendetta" (California Pictures), with Faith Domergue, George Dolenz, Hillary Brooke, Nigel Bruce

Universal-International

Milton Krasner, "The Egg and I," with Claudette Colbert, Fred MacMurray, Marjorie Main, Louise Allbritton, Percy Kilbride

Charles Van Enger, "Buck Private Comes Home," with Bud Abbott, Lou Costello, Joan Fulton, Tom Brown, Nat Pendleton

Russell Metty, "Ivy" (Interwood Prod.), with Joan Fontaine, Richard Ney, Patric Knowles, Herbert Marshall, Cedric Hardwicke

Warners

Peverell Marley, "Night Unto Night," with Viveca Lindfors, Ronald Regan, Osa Massen, Brod Crawford, Rosemary De Camp

Athur Edeson and William Skall, "My Wild Irish Rose" (Technicolor), with Dennis Morgan, Andrea King, Arlene Dahl, Alan Hale, George Tobias, George O'Brien, William Frawley

Carl Guthrie, "The Woman in White," with Eleanor Parker, Alexis Smith, Sydney Greenstreet, Gig Young, Agnes Moorehead, John Emery, Curt Bois.

Ted McCord, "Deep Valley," with Ida Lupino, Dane Clark, Wayne Morris, Fay Bainter, Henry Hull

Sid Hickox, "Dark Passage," with Humphrey Bogart, Lauren Bacall, Agnes Moorehead, Tom d'Andrea

Ernest Haller, "The Unfaithful" with Ann Sheridan, Zachary Scott, Lew Ayres, Steven Geray, Eve Arden

New! TELEFILM'S "Lok-On" Flange

Used by Leading Hollywood 16mm Editors and Producers for Editing and Re-winding

The Telefilm "Lok-On" flange is a [illegible] the [illegible] quickly and [illegible] the [illegible] [illegible] [illegible]

Hints on Exposure Meter Use

George H. Espy of Weston Electric Company gave a most informative talk on exposure meters and correct use at a recent supplemental meeting of the Metropolitan Motion Picture Club of New York City.

He pointed out that, while the meter correctly reads reflected light values, it does not do any thinking for itself—and that process is up to the user.

His advice, as summarized in MMPC bulletin, is:

Take a reading from the camera position, aiming the meter at a point midway between the camera and the view to be taken. Good for average subjects.

Take a closeup reading of the object of greatest interest. If a person take a reading of the flesh tones. Your audience will accept all else if the flesh tones are correctly exposed. Hold your meter a distance equal to the shorter dimension of your subject. Be sure not to read the shadow of the meter. Also be sure no extraneous light falls on the cell.

Read the brightest light and the darkest and expose at a position midway between the two. Add the two light values and divide by two. The stop corresponding to that value is the stop to use. Kodachrome has a latitude of 4 to 1. So if your values exceed those limits you will have under and over exposure on both ends. Best results will follow when the values are 3 to 1 or even 2 to 1.

Use the back of palm of your hand as a substitute for flesh tones if you can't go close enough to read.

Be sure your meter is in good working order. Have it checked at the Weston office or compare it with another meter known to be in good working order.

Cinephon Silent 35mm Mitchell type camera, adapted for Mitchell 1000 foot magazines, 4 Astro lenses, upright finder, tree head tripod, direct focusing rackover ground glass, automatic dissolving shutter, footage counter, tachometer, like brand new.

Cinephon 35mm smallest lightweight newsreel cameras, 200 foot internal magazines, 6 volt electric motor attached, automatic turret with 3 lenses, dissolving shutter, direct focusing, tachometer, tripod complete.

Arriflex 35mm Cameras with 200 foot external magazines, built-in parallax type view finder, perfect center from 3 foot to infinity, Bell & Howell Hi-Hat, 12 volt motor attached, lightweight plastic non-spill battery case and fittings, tripod complete. Choice of Meyer, Astro, Sonnar and Biotar Coated Lenses.

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12 volt shoulder batteries, lightweight plastic, $35.00 per product on.
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We service Arriflex cameras, meters and parts. Weston No. 614 Studio Foot Candle Meters, calibrated, new, $51.00.
Houston 16-35mm Developing Machines. Dollies. Camera Cranes, prices and specifications on request.

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Cinema Workshop

(Continued from Page 14)

As in the lighting of close-ups, so, too, in general set lighting the key light should not hit the set straight-on, but should come from one side or the other. There should be a definite source indicated (to give a reason for the highlights), and its effect should follow through in the entire sequence.

When the source comes from outside a window, its direction may vary with the time of day. For instance, morning sunlight falls at a sharp angle from above, whereas, evening sunlight shines directly into a room, casting long shadows. In a second story room, light from a street-light will, of course, shine into the room from below.

Many 16 mm film-makers have a difficult time matching the lighting of close-ups to that of long shots. They design the long shot lighting first, and then try to match the close-up lighting to it, discovering, in many cases, that the lighting scheme is not at all right for the closer shot. They then rearrange the lights until the close-up looks good, only to find, when the film is finally cut, that the lighting of the two scenes does not match at all.

Because of this, it is better policy to plan the lighting of the close-up first, and then broaden it out into general set lighting for the long shot.

We have discussed some of the standard techniques for lighting sets and close-ups. We are now ready to take up some of the more unusual types of lighting.

NEXT ISSUE *Lighting for Special effect*

Amazingly **INEXPENSIVE!**

CHROMA-TECH, *Creators of Modern Motion Picture Machinery,* has amazed 16mm laboratories from coast-to-coast with their newest . . . the Add-A-Unit Developing Machine, an outstanding 16mm film developing machine designed with not only such singular features as its speed, its safety to film, its remarkable disengaging head, but with PRICES TO MATCH HIGH PRODUCTION METHODS! Add-A-Unit is available in two models. The 150 foot per minute machine (yes, we said 150 foot per minute . . . 9000 feet per hour) sells for $4,500 plus taxes in stainless steel, sheet steel $4,250 plus taxes, when available. The 1000 foot per hour machine sells for $2,750 plus taxes, in stainless steel, sheet steel $2,500 plus taxes, when available. (All prices subject to change without notice.) These prices ARE AMAZING when you consider that ADD-A-UNIT can be run at these profit-making high speeds with ABSOLUTE safety to film, and at a cost so low as to make developing a minor item. If you can, arrange for a demonstration at once! If you cannot arrange to see the Add-A-Unit in person, write for complete information which is available now. Don't delay. Attend to this today! We know you'll agree with the industry and say, "Add-A-Unit, that's the developing machine that uses its head" Write to:

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Victor President Tours

S G Rose, president of Victor Animatograph Corporation of Davenport, is currently on extended business tour through Mexico Later he will visit the Pacific Coast area for meetings with key distributors of the Victor 16mm equipment

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Hi - Speed 16mm. Developing Machine Introduced by Chroma - Tech

Operating at speed of 150 feet a minute with complete safety to film has every appearance of being extremely simple for the new Chroma-Tech Add-A-Unit 16 mm developing machine recently introduced to the 16 mm industry The Add-A-Unit employs an ingenious disengaging mechanism which goes into operation with as little as four ounces of tension placed on the moving film This disengaging head consists of a spring loaded carrying bracket on which is mounted taper roller bearings sustaining a full cantilever stainless shaft Mounted on this shaft is a series of hard rubber rollers which carry the strands of film These rollers may be driven in any combination desired, providing positive drive to each bank of rollers

The film runs under such low tension that it may be pulled away from the rollers and inspected as it continues moving through the drying stage Any action creating tension of four ounces causes the disengaging head to release, and the drive of the film to be stopped

A second bank of rollers is located at the bottom of each developing tank, and these rollers, being adjustable, provide the method of controlling the developing time through controlling the length of each strand in solution, thus, the actual time in the developer Running at a speed of 150 feet a minute, the developing machine performs quietly and smoothly. At this normal speed the solution pumped into the bottom of the tanks creates sufficient turbulence for fine grain developing, and the extra recirculating tanks provide fresh solution with a complete change approximately every two minutes

Each "unit" is made up of six processing tanks and five rinse tanks This system of washing between each tank stops any solution from carrying over to the next tank with the film The "units" are made of expanded steel and dipped time and time again in liquid Latex neoprene This dipping builds up an impregnation of ⅛" on all surfaces This method of impregnation will not pull away from the metal under temperature changes, and provides a surface always clean and unharmed by developing and fixing solutions, it is said

The tanks, before dipping, are spot-welded throughout The dry box is made of steel and is fitted with large glass doors permitting inspection of the film throughout the drying process. Drums of perforated metal, fitted with soft cloth, polish the film as it dries, avoiding any spotting of film by the solution which may have been left on the film. Air circulating through the drums aids drying. The disengaging feature of the Add-A-Unit is provided in the dry box as well, and here hand inspection of the film is possible if desired

The tanks and dry box comprise the basic unit for black and white development For reversal, an additional unit is required, while a third unit is added for color development The addition of each unit is surprisingly simple, and all plumbing and piping is easily accomplished These units need not be adjacent to operate efficiently at the machine's speed of 9000 feet per hour If it is desired, the dry box may be placed in a light room, the film being threaded through a light tight slot from the dark room

New PSA Awards

Photographic Society of America is establishing two new awards for annual presentation in the field of pictorialism. The Stuyvesant Peabody Memorial Award for Pictorial Photography, achievement medal, will be presented to person designated by special committee to have done the most for pictorial photography during the preceding year

Second new award will be one for Merit in Pictorial Exhibiting, in form of a certificate for consistent participation in salon exhibitions

Cowling Made Full Colonel

Announcement has been made by USAAF of the promotion of Lieut Col Herford Tynes Cowling to the grade of full Colonel At termination of hostilities, Col Cowling was assigned to Wright Field, Ohio, as chief of Division of Photography, Technical Intelligence of Air Materiel Command, Prior to entering government service in 1935, he was a member of A S C

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Aces of the Camera

(Continued from Page 12)

of short subjects made in 1934 and called, "Musical Moods." Filmed in Europe, these pictures served the purpose of a testing ground for the then new 3-strip Technicolor camera. He returned to California to employ his talents on "Becky Sharp," the first feature-length film made on 3-strip. Then, "Trail of a Lonesome Pine," and "God's Country and the Woman," which almost terminated his career when a log-jam explosion in which he was too closely involved blew his camera into the nearby river and gashed the head of his assistant. It literally rained tree trunks for an uncomfortable few minutes.

After that he had a unique opportunity to see more of the world. Not all of it, mind you, but Canada, Brazil, South Africa, India, Ceylon, Siam, Java, Bali, China, Peru, Chile, Sweden, Denmark, Czechoslovakia, Hungary and Austria. All this over a period of three years when he roamed with Jimmy Fitzpatrick making the famous "Travel-talks." During this time he shot approximately forty pictures, and on much of the material directed, cut, and served as business manager as well.

On Walter Wanger's "Vogues of 1938" he presided as first cameraman on the New York unit. He shared screen credit for the cinematography on "Dr. Cyclops," shot the live action sequences for Disney's "Fantasia," with Stokowski and Deems Taylor, scenes that required the use of colored filters on all the lights; shared credits on the live action sequences of "The Reluctant Dragon," and took the first Florida location unit for "The Yearling."

His superlative knowledge of Technicolor photography made him a natural choice as the man to set up and have charge of the cameras for the double screen work on "Gone With the Wind," used on the famous fire scenes.

"Dive Bomber," which was nominated for the Academy Award, is also one of his credits. On this picture the major part of his work was on the superb aerial photography that distinguished the production. And perhaps it was the Navy contacts he made while shooting the picture that persuaded him to cast his lot with that branch of the service when the War started to roll.

He also shared the screen credits for the aerial photography on "Captains of the Clouds," before returning to earth to shoot the miniatures for "The Black Swan," which received the Academy Award for Color Photography; and for "Crash Dive," which won the Award for Special Effects, he photographed the underwater scenes and the fire sequence as well as the miniatures.

From 1943 until January 1946 Winton Hoch served in the U. S. Navy, assigned to the Bureau of Aeronautics working on "photographic problems." If this story could be told in its entirety it would throw a lot of light on what some of Hollywood's top cameramen were able to contribute, through their highly specialized knowledge, to the war effort.

In the Navy he organized, and for a year and a half was in charge of the Motion Picture Photography Division of the Navy Photographic Science Laboratory in Washington, D. C., where, in addition to the administrative work he developed a very effective method of radarscope photography that met the pressing needs of the Navy. He also designed and supervised the construction and use of equipment for underwater photography, and participated in anti-submarine work. Higher priority work then took him to the U. S. Naval Ordnance Test Station at Inyokern, California, where he used airborne cameras on all types of Navy aircraft for metric work as well as general reportorial and record coverage on all of the Station's military activities, and developed a mathematical and photographic system that permitted the computers and test conductors to obtain extensive aerial ballistic data that had previously seemed out of reach. This work has been published as a confidential report and distributed to all pertinent government departments.

As a civilian again his first postwar feature credit, recently finished, is "How Dear to My Heart," for Disney.

This modest, conscientious man likes to talk about the future of motion pictures. To him that future looks extremely interesting. And with him, and men like him, that future is assured.

Gilbert Joins Willard

Erskine F. Gilbert has joined Willard Pictures, New York, producers of commercial and industrial motion pictures. He was previously associated with Jam Handy.

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Staging Musical Numbers

(Continued from Page 9)

proofed camera to the amphibious movements of the players, *while keeping time with the music*

Again, in "Anchors Away," there was a sequence in which one of the players danced with a cartoon mouse—the mouse, of course, being painted in later by the cartoon department. In this sequence, the operator had to imagine the mouse and visualize where he was going to be, so that he could leave room for him throughout a constantly changing composition. Levitt admits that for days afterward he was seeing mice in his dreams.

Since "Forty Second Street" sang its way onto the screen in the last decade, the staging of musical numbers for the camera has become a definite art. The dance director (may he soon be awarded a more accurate title) is the technician responsible for expressing music and action in terms of camera and celluloid. Working closely with the cinematographer, he continues to seek new and interesting ways of bringing song and dance to our theatre screens.

Looking back at the progress that has been made in this field, Donohue observes: "All of us now staging musical numbers for the screen owe a great debt to Busby Berkeley, who pioneered the art, and developed an entirely new concept of screen entertainment."

Camera Records V-2 Rocket Flight

A 35mm motion picture camera with electrical attachments built in a specially-designed housing in the fuselage of the German V-2 rocket fired to an altitude of 65 miles at White Sands, New Mexico, last October, provided photographic records of how the earth looks from that heighth.

The standard DeVry 35mm model A camera, after functioning perfectly to record for the eye of man vistas never before seen or adequately imagined, was blown clear of its rocket vehicle at 25,000 feet, and although the lens and batteries were smashed in the free fall to earth from this five mile height the film was found in perfect condition and the metal working parts in surprisingly good order.

Making four pictures per second for three minutes of ascent and part of descent, the camera made a remarkably comprehensive 4½ minute, 50 ft motion picture of the earth's surface, at altitudes varying from 100 feet to 65 miles.

Stills from the film as reproduced in newspapers and magazines reveal the marvelous capacity of the camera to record the detail exposed to it in flight. In fact, one of the stills reproduces a segment of the earth's horizon covering an estimated 40,000 square miles—an unchallengeable tribute to American optical genius and lens manufacturing skill.

RIDING THE CAMERA CRANE FOR A ZOOM ORCHESTRA SHOT. Crane is shown on tracks in upper photo with Director of Photography James Van Trees, A.S.C. atop the ladder supervising the intricate setup. In lower photo camera with Director Al Green aboard the platform has zoomed in for closeups of various sections of the orchestra. Picture is Charles R. Rogers production of "Fabulous Dorseys."

Utah Cine Arts

Annual party night and election of officers to function for 1947 was held by Utah Cine Arts Club of Salt Lake City at Teamsters' Hall on December 18th. Film feature of the evening was "This is the Story of Aladin's Lamp," a 16 mm. kodachrome subject for which Dr. Rich Johnston received three awards during the past year. Club's annual banquet and installation of officers will highlight the January meeting.

New York Eight

In addition to number of films of members, program of the November 18th meeting of New York Eight MM Club, held at hotel Pennsylvania included showings of "Skyways," by Edward Heyl; "The Shriners' Parade," by William Close; and Dr. Macdonald Browne's "Murder in Central Park."

Brooklyn Amateur

Leo Heffernan presented his "Land Snakes Alive" and "Trees That Grow in Brooklyn" at the November 6th meeting of Brooklyn Amateur Cine Club for enthusiastic response of the members. Initial guest night of the new season was held on November 20th at the Stanley Smith restaurant, with program staged by Jay T. Fox.

Seattle Amateur

Charles J. Frisbie, who travelled 25,000 miles earlier this year in England, France, Switzerland and South America, presented portion of the 1,200 feet of 8 mm. kodachrome he shot on the tour at the December 10th meeting of Seattle Amateur Movie Club. Progress is being made on plans for production of a club film, "Let's Make a Movie," which is slated to start shooting within the next few months.

Leicas Again Available

Distribution of Leica cameras in the United States has been resumed, with limited supplies available, is announced by E. Leitz, Inc. New Leica IIIc model is made in the original Leitz works at Wetzler, Germany, and are imported by arrangement with Office of Military Government, U. S., through U. S. Commercial Company. Money derived from importation will go into funds for cost of occupation of Germany.

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Pictorial Films of New York announces it has purchased outright world distribution rights to two amateur-produced 16mm pictures—"Arts and Crafts in Mexico," and "The Inside Story." Former was produced by Ralph E Gray, FACL, and latter was made by Dan Billman, Jr., president of Minneapolis Cine Club

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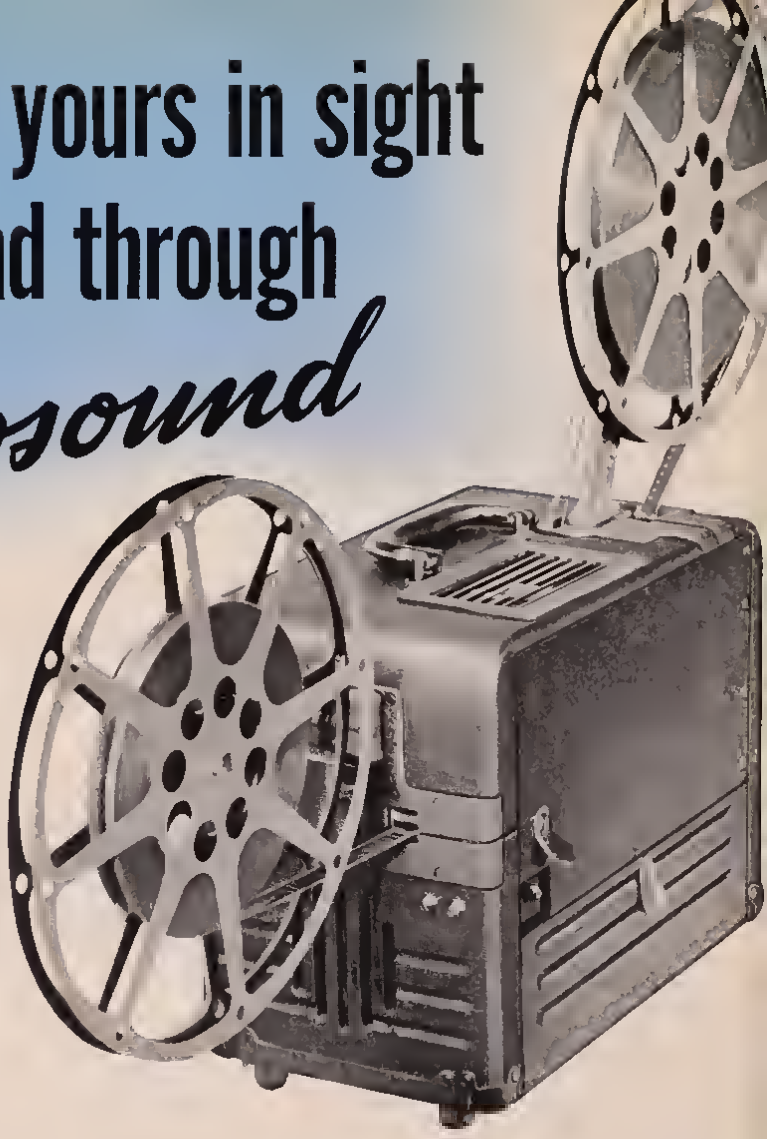

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